



PM

21 8536-2 11/30/98  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

Page 1 of 12

NOV 30 1998

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Mardel Belotinsky  
Regulatory Affairs Specialist  
Soil Chemicals Corporation  
P.O. Box 782  
8770 Highway 25  
Hollister, CA 95024-0782

SUBJECT: EPA Reg. No. 8536-2  
Chloropicrin 100  
Label Amendment  
Submission Dated March 6, 1998

Dear Ms. Belotinsky:

The label amendment submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended is acceptable provided you make the following changes:

1. Under the Personnel Protective Equipment section, add "... or a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any N, R, P, or HE prefilter." after TC-14G to the paragraph starting with "If the air concentration level exceeds 0.1 ppm ... prefix TC-14G." This is from PR Notice 98-9 dated October 1998.
2. Under Work Safety Requirements, replace "PPE" with "Personnel Protective Equipment (PPE)" in the 3rd paragraph where PPE is used for the first time on the label.
3. Under General Preparation and Instructions:
  - a. Add "For example, a 300 pounds per acre rate would require 36,000 gallons of water for 1,000 ppm" to the end of paragraph No. 4.
  - b. Add "The total volume of water, including the amount used for flushing the irrigation system should not exceed 1.5 acre-inches (40,000 gallons of water/A)" to the end of paragraph No. 6.

... continued ...

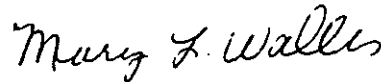
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4. Under APPLICATION OF CHLOROPICRIN 100 THROUGH DRIP LINE, add the following statement to the USE PRECAUTIONS section, per PR Notice 87-1 for Toxicity Category I products: "Posting of areas to be chemigated is required when: (a) any part of the treated area is within 300 ft of sensitive areas such as residential areas, labor camps, businesses, day care centers, hospitals, in-patient clinics, nursing homes, or any public areas such as schools, parks, playgrounds, or other public facilities not including public roads, or (b) when the chemigated area is open to the public such as golf courses or retail greenhouses".

A stamped copy is enclosed for your records. Submit a copy of your final printed labeling before you release the product for shipment. Your release of the product for shipment constitutes acceptance of these conditions.

If you have any questions, please do not hesitate to contact Dr. S. (Oonni) Oonnithan (E-mail: [oonnithan.suku@epa.gov](mailto:oonnithan.suku@epa.gov)) of PM-21 staff at 703-605-0368.

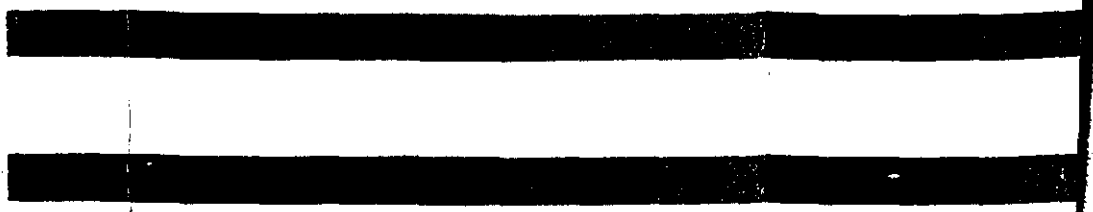
Sincerely,



Mary L. Waller  
Product Manager (21)  
Fungicide Branch  
Registration Division (7505C)

3712

SPECIMEN



**RESTRICTED USE PESTICIDE**

For retail sale to and use only by Certified Applicators, or persons under their direct supervision, and only for those uses covered by the Certified Applicator's certification.

**CHLOROPICRIN 100**

**FUMIGANT**

**ACCEPTED  
with COMMENTS  
In EPA Letter Dated:**

11/30/98

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act,  
as amended, for the pesticide  
registered under EPA Reg. No.  
8536-2

ACTIVE INGREDIENT:	
CHLOROPICRIN	99%
INERT INGREDIENTS:	1%
TOTAL:	100%

This product weighs 13.7 pounds per gallon.

KEEP OUT OF REACH OF CHILDREN

DANGER



PELIGRO

POISON

PELIGRO: Si Usted no entiende la etiqueta, busque a alguien para que se la explique a Usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

IN ALL CASES OF OVEREXPOSURE  
GET MEDICAL ATTENTION IMMEDIATELY.  
TAKE PERSON TO A DOCTOR OR  
AN EMERGENCY TREATMENT FACILITY.

**STATEMENT OF PRACTICAL TREATMENT**

IF INHALED: Get exposed person to fresh air. Keep warm. Make sure person can breathe freely. If breathing has stopped, give artificial respiration, preferably mouth-to-mouth. Do not give anything by mouth to an unconscious person.

IF ON SKIN: Immediately remove contaminated clothing, shoes, and other items covering the skin. Wash contaminated skin area thoroughly with soap and water.

IF IN EYES: Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes.

NOTE TO PHYSICIAN: Chloropicrin is a volatile liquid that is the active ingredient in tear gas. As a gas it is a powerful lachrymator. Early symptoms of overexposure are lachrymation, respiratory distress, and vomiting. Pulmonary edema may develop later. Treatment is symptomatic.

See side panel for additional precautionary statements.



Soil  
Chemicals  
Corporation  
PRODUCTS

P. O. Box 782, Hollister, CA 95024

EPA Est. 8536-CA-1,2,3,4;FL-1  
EPA Reg. No. 8536-02

NET CONTENTS .....LBS.

5912

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS  
AND DOMESTIC ANIMALS:  
DANGER**

THIS FUMIGANT IS A HIGHLY HAZARDOUS MATERIAL AND MUST BE HANDLED WITH CARE ONLY BY THOSE INDIVIDUALS EXPERIENCED WITH ITS PROPER USE. CONSULT YOUR DEALER REPRESENTATIVE OR THE DISTRIBUTOR FOR CORRECT PROCEDURE BEFORE USING. READ AND FOLLOW ALL LABEL DIRECTIONS AND PRODUCT LITERATURE SPECIFIC TO YOUR REQUIREMENTS.

POISONOUS LIQUID AND VAPOR. INHALATION MAY BE FATAL. CHLOROPICRIN IS READILY IDENTIFIABLE BY SMELL. EXPOSURE TO VERY LOW CONCENTRATIONS OF VAPOR WILL CAUSE IRRITATION OF EYES, NOSE, AND THROAT. CONTINUED EXPOSURES AFTER IRRITATION IS EVIDENT, OR HIGHER CONCENTRATIONS, MAY CAUSE PAINFUL IRRITATION TO EYES OR TEMPORARY BLINDNESS. LIQUID WILL CAUSE CHEMICAL BURNS TO SKIN OR EYES. DO NOT GET ON SKIN, IN EYES, OR ON CLOTHING HARMFUL OR FATAL IF SWALLOWED.

CHLOROPICRIN FUMIGANT HAS THE CAPACITY TO CAUSE MARKED IRRITATION TO THE UPPER RESPIRATORY TRACT, AND IS A STRONG LACHRYMATOR (TEAR PRODUCING EYE IRRITANT). LOW CONCENTRATIONS, BELOW THOSE NECESSARY TO CAUSE SERIOUS SYSTEMIC INTOXICATION, ARE CAPABLE OF CAUSING SEVERELY PAINFUL EYE IRRITATION, HENCE WILL NOT BE VOLUNTARILY TOLERATED. HOWEVER, THE EFFECT MAY BE SO POWERFUL THAT A PERSON MAY BECOME TEMPORARILY BLINDED AND PANIC-STRICKEN AND THAT IN TURN MAY LEAD TO ACCIDENTS.

**AIR CONCENTRATION LEVEL**

The acceptable air concentration level for persons exposed to chloropicrin is 0.1 ppm (0.7 mg/m<sup>3</sup>). If the air concentration level exceeds 0.1 ppm, an air-purifying respirator must be worn. If the air concentration level exceeds 4 ppm, an air supplying respirator must be worn. The air concentration level is measured by a direct reading detection device, such as a Matheson-Kitagawa.

**PERSONAL PROTECTIVE EQUIPMENT**

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category H on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear:

- Loose-fitting or well ventilated long-sleeved shirt and long pants
- Shoes and socks
- Full-face shield or safety glasses with brow and temple shields (Do NOT wear goggles.)
- When the acceptable air concentration level is above 0.1 ppm and a respirator is required, protect the eyes by wearing a full-face respirator.
- No respirator is required, if the air concentration level of chloropicrin in the working area is measured to be less than 0.1 ppm.
- A respirator is required under the following circumstances:
  - If the air concentration level exceeds 0.1 ppm at any time, applicators and other handlers must wear (a) a respirator with an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), OR (b) a respirator with a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).
  - If the air concentration level exceeds 4 ppm at any time, applicators and other handlers must wear (a) a supplied-air respirator (MSHA/NIOSH approval number prefix TC-19C) OR (b) a self-contained breathing apparatus (SCBA) (MSHA/NIOSH approval number prefix TC-13F).

6712

### WORK SAFETY REQUIREMENTS

- Do not wear jewelry, gloves, goggles, tight clothing, rubber protective clothing, or rubber boots when handling. Chloropicrin is heavier than air and can be trapped inside clothing and cause skin injury.
- Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them.
- Clean PPE after each day's use. Immediately after contamination remove outer clothing, shoes, and socks and do not reuse until thoroughly aerated or ventilated. Keep such clothing and shoes outdoors until thoroughly aerated. Then follow the PPE manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE and work clothing separately from other laundry.
- Follow PPE manufacturer's instructions for cleaning/maintaining protective eyewear, face shields and respirators.

### USER SAFETY RECOMMENDATIONS

Users should:

- 1) Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- 2) Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- 3) Remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.
- 4) Supply your physician with information on Chloropicrin, which is available from your Dealer Representative or the Distributor.

### ENVIRONMENTAL HAZARD

This fumigant is toxic to fish and aquatic organisms. Do not contaminate water by cleaning of equipment or disposal of wastes. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollution Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

### CHEMICAL HAZARD

Do not use containers or application equipment made of magnesium, aluminum, or their alloys, as under certain conditions this fumigant may be severely corrosive to such metals. Do not permit water to be used to clean the fumigant pressure system as corrosion will result. Diesel oil is satisfactory for this purpose.



7812

## STORAGE AND DISPOSAL

**STORAGE:** Store in a cool, dry, well-ventilated area under lock and key. Post as a pesticide storage area. Do not contaminate water, food, or feed by storage or disposal. Persons moving, handling, or opening containers must wear the personal protective equipment (including prescribed respirator) specified in the Hazards to Humans section of this labeling. Open container only in a well-ventilated area.

**RETURN CYLINDERS TO:**

TriCal, Inc.	TriCal, Inc.
8770 Highway 25	1029 Railroad Street
Hollister, CA 95023	Corona, CA 91720

Cylinders are the property of TriCal, Inc. and should be returned promptly by collect auto freight. (1) When a cylinder is empty, the valve should be closed, the safety cap screwed onto the valve outlet, and the protection bonnet replaced prior to its return to the shipper. (2) Do not ship cylinders without safety caps or valve protection bonnets. (3) When a cylinder is partially full and there is no further requirement for the product, contact the company for return instructions. (4) Containers should never be refilled by the consumer or used for any other product or purpose.

**SHIPPING:** This fumigant is classified in the U.S. Department of Transportation Hazardous Material Regulations as Chloropicrin, 6.1, UN 1580, PG 1, Poison-Inhalation Hazard, Hazard Zone B and no exemptions from specifications, packaging, marking, or labeling are allowed. Describe empty cylinders as having *last contained Chloropicrin (Inhalation Hazard)*. Do not ship with foods, feeds, or clothing.

**HANDLING:** (1) The valve protection bonnet and safety cap should be removed only when fumigant is about to be removed from the cylinder. The safety cap and valve protection bonnet must be replaced when the cylinder is not in use. (2) Cylinders should never be subjected to rough handling or to abnormal mechanical shock such as dropping, bumping, dragging, or sliding. (3) Ropes, slings, hooks, tongs, and similar handling devices should not be used for unloading cylinders. (4) A suitable hand truck, fork truck, or similar device to which the cylinders can be firmly secured should be used for transporting the heavier cylinders.

**SPILL AND LEAK PROCEDURES:** Evacuate everyone from the immediate area of the spill or leak. For entry into affected area to correct problem, wear the personal protective equipment (including prescribed respirator) specified in the Hazards to Humans section of this labeling. Move leaking or damaged containers outdoors or to an isolated location. Observe strict safety precautions. Work upwind, if possible. Allow spilled fumigant to evaporate or to absorb onto vermiculite, dry sand, earth, or similar absorbent material. Such material should be disposed of on site or at an approved disposal facility. Only correctly trained and PPE-equipped handlers are permitted to perform such cleanup. Do not permit entry into the spill or leak area by any other person until the concentration of chloropicrin is measured to be less than 0.1 ppm.

**DISPOSAL:** Do not contaminate water, food, or feed by storage or disposal. Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

## DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in any manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

## PLACARDING OF FUMIGATED AREAS

The applicator (or supervisor of the application) must placard all entrances to the fumigated area with signs bearing

- skull and crossbones symbol
- "DANGER/PELIGRO"
- "Area under fumigation, DO NOT ENTER/NO ENTRE"
- "Chloropicrin Fumigant in use"
- the date and time of fumigation
- name, address, and telephone number of the applicator

Do not allow entry by unprotected persons into the fumigated area until the signs are removed. Such signs must only be removed when the air concentration level of chloropicrin is measured to be less than 0.1 ppm. Signs must remain legible during the entire posting period. Only a certified applicator (or someone under his/her supervision) may remove warning signs at entrances to fumigated structures.

8912

## AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements in this labeling about personal protective equipment, restricted-entry intervals, and notification to workers. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard (WPS). No instructions elsewhere on this labeling relieve users from complying with the requirements of the WPS.

**ENTRY RESTRICTIONS:** Greenhouse Space Fumigation: Entry (including early entry that would otherwise be permitted under the WPS) by any person—other than a correctly trained and equipped handler who is performing a handling task permitted by the WPS—is PROHIBITED in the entire greenhouse (entire enclosed structure/building) from the start of application until aeration reduces the air concentration level of chloropicrin in the working area to less than 0.1 ppm. Greenhouse Soil Fumigation: Entry (including early entry that would otherwise be permitted under the WPS) by any person—other than a correctly trained and equipped handler who is performing a handling task permitted by the WPS—is PROHIBITED in the entire greenhouse (entire enclosed building/structure) from the start of application until 48 hours after application AND until the air concentration level of chloropicrin in the working area is measured to be less than 0.1 ppm. Until the aeration of the soil is complete (usually 10-14 days), non-handlers are permitted in the greenhouse ONLY while the air concentration level of chloropicrin in the working area remains less than 0.1 ppm. If tarps are used for the application, non-handler entry is prohibited during tarp removal and until the air level is measured to be less than 0.1 ppm. Outdoor Soil Fumigation: Entry (including early entry that would otherwise be permitted under the WPS) by any person—other than a correctly trained and equipped handler who is performing a handling task permitted on this labeling—is PROHIBITED from the start of application until 48 hours after application. In addition, if tarps are used for the application, non-handler entry is prohibited while tarps are being removed.

**NOTIFICATION:** Notify workers of the application by warning them orally and by posting fumigant warning signs, as described in the "Placarding of Fumigated Areas" section of this labeling. Post the fumigant warning sign instead of the WPS sign for this application, but follow all WPS requirements pertaining to location, legibility, size, and timing of posting and removal. Greenhouses—Soil or Space Fumigation: Post the fumigant warning signs outside all entrances to the entire greenhouse (entire enclosed building/structure). Outdoor Soil Fumigation: Post the fumigant warning signs at entrances to treated areas.

**PPE FOR ENTRY DURING ENTRY-RESTRICTED PERIOD:** PPE for entry that is permitted by this labeling is listed in the "Hazards to Humans and Domestic Animals" section of this labeling.

## PRECAUTIONS TO FOLLOW

### PRIOR TO FUMIGATION:

- (1) Before using fumigant, read and follow all directions on the label and in the product literature.
- (2) Comply with all local regulations and ordinances. Obtain an application permit from Agricultural Regulatory agencies as required.
- (3) It is advisable to supply your physician with information on chloropicrin, which is available from the company.
- (4) Obtain medical assistance at once in case of illness after exposure, and do not allow conditions which could accidentally cause further exposure until recovery is complete.
- (5) Never fumigate alone. It is imperative to always have an assistant and proper protection equipment, as listed below, to aid in case of accidents.
- (6) Drivers of application equipment must advise other workers of all precautions and procedures. In addition, drivers must instruct their helpers in the mechanical operation of the tractor and how to work with the tractor and driver while fumigating.
- (7) Handle this fumigant in the open, when possible, with the operator "upwind" from the container where there is good ventilation.
- (8) Check the fumigant pressure system, when used, for leaks before beginning application.
- (9) A gas mask must be carried in each service vehicle.
- (10) Do not spill. If liquid fumigant splashes or spills on shoes or clothing, remove them at once, as fumes from the contaminated area will be an intolerable source of irritation. If the liquid contacts skin where rings or bandages are worn, remove them and wash the exposed skin with soap and water. Air expose shoes or clothing outside and do not wear until free of all traces of fumigant.
- (11) Always have adequate clean water available to wash the skin.

### DURING FIELD FUMIGATION:

- (1) This fumigant should not be applied when there is an atmospheric inversion, since uncomfortable concentrations of chloropicrin may drift to nearby areas.
- (2) Do not lift injection shanks to turn at end of a pass until the fumigant has drained from the system following closure of the shutoff valve.
- (3) Trash pulled by the shanks to the ends of the field when fumigating must be covered by lifting the shanks, then covering the trash with polyethylene film before making the turn for the next pass.



### PRECAUTIONS TO FOLLOW, Continued

(4) In case of the rupture of a hose or fitting while applying the fumigant, immediately stop the tractor and motor. Get off the tractor and get to a place where the problem can be observed without exposure to the fumes. Approach from upwind, with respiratory protection if required and make necessary repairs. (5) When changing the cylinders, be certain they are turned off and the fumigant system is not under pressure.

**AFTER FIELD FUMIGATION:** Do not feed domestic animals on crop residues unless an EPA tolerance exists for such use. Examples are, but not limited to, seeded or volunteer cover crops growing on soil which has been fumigated as a preplant treatment for a registered crop use.

**NOTE CAREFULLY:** Fumigation may temporarily raise the level of ammonia nitrogen and soluble salts in the soil. This is most likely to occur when heavy rates of fertilizer and fumigant are applied to soils that are either cold, wet, acid, or high in organic matter. To avoid injury to plant roots, fertilize as indicated by soil tests made after fumigation. To avoid ammonia injury and/or nitrate starvation to crops, avoid using fertilizers containing ammonia salts and use only fertilizers containing nitrates until after the crop is well established and the soil temperature is about 65 degrees F. Liming highly acid soils before fumigation stimulates nitrification and reduces the possibility of ammonia toxicity.

## GENERAL INSTRUCTIONS

THIS FUMIGANT IS A HIGHLY HAZARDOUS MATERIAL AND SHOULD BE USED ONLY BY PERSONS TRAINED IN ITS PROPER USE. BEFORE USING, READ AND FOLLOW ALL LABEL PRECAUTIONS AND DIRECTIONS. ALL PERSONS WORKING WITH THIS FUMIGANT SHOULD BE TRAINED IN THE HAZARDS, THE USE OF REQUIRED RESPIRATOR EQUIPMENT, DETECTOR DEVICES, EMERGENCY PROCEDURES, AND THE PROPER USE OF THE FUMIGANT.

### SOIL FUMIGATION

CHLOROPICRIN 100 is a preplant fumigant for the control of soil-borne pests as listed such as, wireworms and nematodes, and diseases caused by certain species of Phythium, Phytophthora, Fusarium, and Verticillium. It is to be used in soil to be planted to the crops listed below. Prior to application, the soil should be in condition for planting and with sufficient moisture to support seed germination. Keep pets, livestock, and other domestic animals out of the treated area during application, during the exposure period as specified for applications in Directions for Use, and during removal of tarpaulin, if used.

### BROADCAST APPLICATION

Apply CHLOROPICRIN 100 by means of chisels spaced no more than 12 inches apart and at a depth of 8 inches below soil surface. To seal in fumigant after application, drag or cullpack immediately behind chisels or wet down treated area to a depth of 1 inch, or cover treated area with a plastic tarpaulin. If plastic tarpaulin is used, it should remain for a minimum of 48 hours. Do not apply to areas adjacent to fields where valuable crops are growing nor adjacent to buildings inhabited by humans or livestock. Fumigation of small volumes of soil or mushroom casing soil may be made by injecting chloropicrin 6 - 8 inches deep in a grid pattern not to exceed 12 inch spacing.

### RECOMMENDED DOSAGES - PREPLANT SOIL FUMIGATION

LAND TO BE PLANTED TO:	POUNDS PER ACRE <sup>1</sup>
Floral Crops, Nursery Crops	500
Plant & Seed Beds	300 - 500
Eggplant, Cucumbers, Melons, Tomatoes	300 - 500
Sweet Potatoes, Yams	150 - 400
Onions	200 - 400
Strawberries	150 - 500
All Other Crops <sup>2</sup>	150 - 500
Mushrooms Casing Soil <sup>3</sup>	5 - 10 cc/cu.ft
Potting Soil	3-4 cc/sq.ft
Seed Beds	3-6 cc/sq.ft

<sup>1</sup> If treated area is covered with a plastic tarpaulin immediately after application dosage may be reduced by 33%.

<sup>2</sup> Not to be used with aquatic crops or for forestry uses.

<sup>3</sup> In the case of Mushroom soil, seal with water plus plastic or wet newspapers.

<sup>4</sup> To facilitate application of this product when applying in low dosages, dilution with an acceptable solvent is allowed. If the solvent is to be used in pre-plant soil fumigations for the production of food crops, then the solvent must be approved for such use.

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**ROW OR BED APPLICATIONS** may be made at the broadcast rates but the amount used will be proportionately less per acre depending on the row spacing and width of treatment in the row or bed.

**EXPOSURE AND AERATION:** After application, leave the soil undisturbed for 10 to 14 days. Wet soil retards diffusion of the fumigant, thus requiring a longer exposure period. At the end of the exposure period, aerate the soil by plowing or deep cultivation. If heavy rains accompanied by low temperatures occur during the exposure period, working the soil several times is essential for thorough aeration. Aeration is usually complete when the odor of the fumigant is no longer evident.

### APPLICATION OF CHLOROPICRIN 100 THROUGH DRIP LINE

**DOSAGE:** 100 to 300 pounds per acre. See crops listed in dosage table above

**DILUTION RATE:** Pre-mix with TS Series surfactant prior to application through drip system at a ratio of 1:20 surfactant to CHLOROPICRIN 100. TS Series surfactants can be obtained from Tnnty Manufacturing Co., P. O. Box 1519, Hamlet, NC 28345

#### GENERAL PREPARATION AND INSTRUCTIONS:

1. Plan the application by calculating the amount of CHLOROPICRIN 100 required at the appropriate rate for the crop, acreage and target pest.
2. CHLOROPICRIN 100 must be applied through a drip irrigation system to wet the soil thoroughly in the area being treated. Drip emitters should be spaced 8-12" apart.
3. TS Series surfactants may be metered into the supply line for CHLOROPICRIN 100 and then passed through a mixing device, such as a centrifugal pump or static mixer, to assure proper agitation. The mixture of CHLOROPICRIN 100 and TS Series surfactant must then be metered into the water supply and passed through a similar mixing device to assure proper agitation before it is distributed into the drip irrigation system.
4. Meter CHLOROPICRIN 100 into the drip system according to the dosage desired. An adequate concentration of chloropicrin must be present in order to be effective. At no time should the concentration of active ingredient exceed 1,000 ppm in the drip line.
5. Soil conditions prior to application are as follows:
  - A. Ground must be in seed-bed condition, no clods larger than 1/2" in diameter.
  - B. Beds must be listed, shaped and ready for planting.
  - C. Soil moisture must be at 50% of field capacity in the top 2-3" at time of CHLOROPICRIN 100 application.
6. After application of CHLOROPICRIN 100 you should continue to irrigate the area with untreated water to flush the irrigation system. Do not permit chloropicrin to remain in the irrigation system after the application is complete.

#### USE PRECAUTIONS:

1. Apply this product only through drip (trickle) irrigation systems. Do not apply this product through any other type of irrigation system.
2. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.
3. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
4. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
5. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
6. The system must contain a functional check valve, vacuum-relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
7. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
8. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
9. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
10. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
11. Systems must use a metering pump such as a positive displacement injection pump (e.g., diaphragm pump) or a Venturi system which is effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

**AERATION:** Do not disturb treated soil for at least 2 weeks. Wet soil retards diffusion of the fumigant, thus requiring a longer exposure period. Aeration is usually complete when the odor of the fumigant is no longer evident.



### FUMIGATION OF ENCLOSED SPACES

(NOT FOR USE IN CALIFORNIA)

When used for fumigation of enclosed spaces (houses and other structures, warehouses, vaults, chambers, greenhouses, trucks, vans, boxcars, ships, or other transport vehicles) two persons trained in the use of this product must be present at all times during introduction of the fumigant, testing, and aeration periods. Do not fumigate sites which may be used for the storage or transport of raw agricultural commodities. After fumigation, fumigated areas must be aerated until the air concentration level of chloropicrin is measured to be less than 0.1 ppm. Until the acceptable air concentration level is reached, do not allow any person to enter into the fumigated area unless he/she is wearing the specified personal protective equipment (including prescribed respirator) specified in the Hazards to Humans section of this labeling. In greenhouses, additional Worker Protection Standard restrictions apply.

**SPACE FUMIGATION:** (Not containing raw agricultural commodities): For control of mites, cockroaches, silverfish, and fungi use 1 pound of CHLOROPICRIN 100 per 1000 cubic feet. Increase dosage 1-1/4 to 1-1/2 pounds per 1000 cubic feet when absorbent materials are present.

**APPLICATION INFORMATION:** Prior to application, all windows, doors, and other openings should be sealed to make the building gas tight. Temperature at time of application should be 60 degrees F or higher. Introduce CHLOROPICRIN 100 into a shallow pan, or onto burlap sacks, or similar absorbent material located inside the structure. Use fans to hasten evaporation of chloropicrin and to keep fumigant in circulation. Ventilate area thoroughly for 12 to 24 hours. Fans, dryness, and high temperatures speed aeration.

**VAULT FUMIGATION:** For the control of fleas, mites, silverfish, cockroaches, and moths in furniture and clothing use 1 to 2 pounds of CHLOROPICRIN 100. In heavily loaded vaults, increase dosage rates by an additional 1 pound/1000 cubic feet.

**APPLICATION INFORMATION:** Introduce the desired amount of CHLOROPICRIN 100 into a shallow pan or onto burlap sacks or similar absorbent material located inside the structure or vault. Use fans to hasten evaporation of chloropicrin and to keep fumigant in circulation. Exposure time is 24 hours. Ventilate by opening doors and using fans for 12 to 24 hours prior to re-entry.

### TREATMENT OF WOOD, TIMBERS, POLES, PILES AND GLUE-LAMINATED BEAMS FOR CONTROL OF INTERNAL WOOD DECAY BY FUNGI AND INSECTS

(NOT FOR USE IN CALIFORNIA)

Carefully pour or inject CHLOROPICRIN 100 into drilled holes, then plug the holes with a 2-1/2 inch to 3 inch treated wood plug. When pouring or injecting fumigant and plugging holes, wear safety goggles to avoid splashing any liquid into the eyes. Holes in poles and piles should be positioned in a spiral pattern by drilling each hole 6 inches to 12 inches vertically from the preceding hole and rotating it by 90 degrees. Drill holes at a steep downward angle and avoid drilling through seasoning checks. If a treating hole intersects an internal rot pocket, plug that hole and drill new hole into solid wood above and, if possible, below the rot. For in-ground poles the first hole should be drilled at the ground level. Fill and plug the lowest hole before filling next higher hole. The suggested number of holes per treated structural timber and dosage are indicated in the following table:

Pole Circumference	Hole Diameter	Length of Hole	Holes Per Pole	Pints of Fumigant/Pole
Less than 32"	5/8"	15"	6	3/4
	5/8"	18"	5	3/4
	3/4"	15"	4	3/4
32"-45"	3/4"	15"	6	1
	3/4"	18"	5	1
	3/4"	21"	4	1
	3/4"	24"	3	1
	7/8"	21"	3	1
More than 45"	3/4"	24"	6	2
	7/8"	21"	5	2
	7/8"	24"	4	2

For piles treated near the cutoff tops, cap the cutoff as recommended by the American Wood Preserver's Assn. Standard MA to contain the chemical and prevent reinfection. To treat glue-laminated beams, use at least 0.06 pints of chemical per cubic foot of wood to be treated. Drill treating holes into the top laminate through all glue lines when treatment is necessary. Stagger holes to minimize strength reductions of timbers. A vapor barrier wrap may be needed to confine chemical vapor. Do not treat inside an inhabited building. Have at least one gas mask with appropriate canisters available at the treating site. Wear protective gear and stand upwind when injecting the fumigant.

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**WARNING AGENT**

Chloropicrin may be used for clearing structures prior to fumigating with methyl bromide or sulfuryl fluoride. Prepare structure for fumigation, and seal all except one entrance. Use 1 ounce per 10,000 - 15,000 cubic feet of space to be fumigated. When building is evacuated, seal the entrance and start the fans. Check seals for tightness. Five to ten minutes later, introduce methyl bromide or sulfuryl fluoride. CHLOROPICRIN 100 is compatible when mixed with Chlorinated C<sup>3</sup> Hydrocarbons.

**WARRANTY**

NOTICE: Seller warrants that the product conforms to its chemical description and is reasonably fit for the purposes stated on the label when used in accordance with directions under normal conditions of use, but neither this warranty nor any other warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE, express or implied, extends to the use of this product contrary to label instruction, or under abnormal conditions, or under conditions not reasonably foreseeable to seller, and buyer assumes the risk of any such use



**INHALATION  
HAZARD**

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CHLOROPICRIN  
UN 1580  
INHALATION HAZARD

February 9, 1998

